

In re Patent Application of:
KARL GUENTHER, et al
Serial No. 10/685,300
Filing Date: 10/14/2003

In the Claims:

1. (currently amended): A transportation system comprising:
a running surface;
a support structure for positioning the running surface above ground level;
a carrying vehicle operable along the running surface;
a rigid suspension member rotatably connected to the carrying vehicle;
a car body rigidly attached to the suspension member, wherein a single axis of rotation of the car body is above a connection of the suspension member to the carrying vehicle, thus effectively extending a radius of rotation of the car body, the car body having a floor surface for carrying a load thereon, wherein the floor surface moves from a horizontal orientation to a tilted orientation during operation of the carrying vehicle along a curved portion of the running surface so as to result in a pendulum like movement of the floor surface and thus the load , wherein the rigid suspension member includes a first support at a proximal end thereof carried by the carrying vehicle and a linking arm connected between the car body and the first support, wherein the linking arm includes an arcuate member rotatably operable with a surface of the first support and a bracket having a proximal end operable with the arcuate member and a distal end affixed to the car body.

2. (original) A system according to claim 1, wherein the carrying vehicle comprises:
a truck;
wheels operable with the truck for rolling along the running surface; and
a chassis carried by the truck, wherein the car body is suspended therefrom.

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Claim 3 (cancelled)

4. (previously presented) A system according to claim 1, wherein the suspension member is pivotally connected to the carrying vehicle, and wherein the car body is allowed to freely rotate about a longitudinal axis thereof while having a restricted movement in a longitudinal direction.

5. (original) A system according to claim 1, further comprising at least one of a generally U-shaped duct having a slot therein formed by opposing flanged portions, an I-beam having opposing lower flanged portions, and an I-beam pair having opposing outer flange portions, upper surfaces of which form the running surface.

6. (original) A system according to claim 1, further comprising a rail pair forming a track carried by the running surface, wherein the carrying vehicle is operable thereon.

7. (previously presented) A system according to claim 6, wherein at least a portion of the track is superelevated by at least eight degrees, and wherein the superelevated track includes one rail of the rail pair at a different elevation than the opposing rail.

8. (previously presented) A system according to claim 1, wherein at least a portion of the running surface is superelevated, and wherein the superelevated running surface includes one side of the surface at a different elevation than an opposing transverse side thereof.

9. (previously presented) A system according to claim 8, wherein the superelevated portion of running surface is inclined by at least eight degrees.

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10. (original) A system according to claim 8, wherein the at least a portion of the running surface includes curved portions thereof.

11. (currently amended): A transportation system comprising:
a running surface including a steel rail pair forming a track;
a support structure for positioning the running surface above ground level;
a truck having steel wheel pairs operable along the running surface with the wheel pairs synchronized and tapered for self centering while rolling along the track ;
a chassis carried by the truck; and
a car body suspended from the chassis, wherein a center of rotation of the car body is above the connection therebetween, the car body having a floor surface for carrying a load thereon, wherein the floor surface moves from a horizontal orientation to a tilted orientation during operation of the truck along a curved portion of the running surface so as to result in a pendulum like movement of the floor surface and thus the load; and

a suspension member for removably suspending the car body from the chassis, the suspension member having a first support at a proximal end thereof carried by the chassis and a linking arm connected between the car body and the first support, wherein the linking arm includes an arcuate member rotatably operable with a surface of the first support and a bracket having a proximal end operable with the arcuate member and a distal end affixed to the car body.

12. (previously presented) A system according to claim 11, further comprising a generally U-shaped duct having a slot therein formed by opposing flanged portions, an upper surface of which forms the running surface.

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13. (original) A system according to claim 11, further comprising at least one of an I-beam having opposing lower flanged portions and an I-beam pair having opposing outer flange portions, upper surfaces of which form the running surface.

14. (original) A system according to claim 11, wherein at least two chassis are connected to form a train, and wherein the at least two chassis are connected to a single truck for articulating movement therewith.

15. (original) A system according to claim 11, wherein the support structure comprises a column and cooperating arm portion for supporting the running surface above the ground level.

16. (original) A system according to claim 11, wherein the truck comprises a frame having wheels operable therewith for transporting the truck along the running surface.

Claims 17 and 18 (cancelled)

19. (previously presented) A system according to claim 11, wherein the track is superelevated at least along a curved portion thereof and wherein the superelevated track includes one rail at a different elevation than an opposing rail.

20. (previously presented) A system according to claim 11, wherein at least a portion of the running surface is superelevated, and wherein the superelevated running surface includes one side of the surface at a different elevation than an opposing transverse side thereof.

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21. (previously presented) A system according to claim 20, wherein the superelevated portion of the running surface is inclined by at least eight degrees.

22. (original) A system according to claim 11, wherein the chassis is carried by at least two trucks.

23. (original) A system according to claim 11, wherein the car body comprises at least one of a passenger car, a freight car, and a combination thereof.

24. (previously presented) A system according to claim 23, wherein a plurality of car bodies is suspended from a plurality of chassis, wherein one chassis is connected to an adjacent chassis, and wherein adjacent car bodies are accessible therebetween.

Claim 25. (cancelled)

26. (currently amended): A system according to claim ~~25~~ 11, further comprising a connector operable with the suspension member for operably attaching and detaching the car body from the chassis, the connector having a vise for receiving the suspension member proximal end therein and a turnbuckle for securing the vise in a locking position.

Claim 27 (cancelled)

28. (currently amended): A system according to claim ~~27~~ 11, further comprising:
a first bracket pair affixed to the car body; and
a second bracket pair affixed to the first support, wherein the linking arm comprises a linking arm pair, each linking arm of the linking arm pair having proximal

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and distal ends slidably connected to first and second brackets of the first and second bracket pairs for providing a lateral rotation of the car body about the center of rotation located above the chassis, and wherein the center of rotation is laterally displaced during rotation of the car body.

Claim 29 (cancelled)

30. (currently amended): A system according to claim 29 11, wherein the surface of the first support comprises a concave shape for receiving the arcuate member.

31. (currently amended): A system according to claim 29 11, wherein the arcuate member is circular in cross section.

32. (currently amended) A transportation system ~~according to claim 27~~
comprising:

a running surface including a steel rail pair forming a track;;
a support structure for positioning the running surface above ground level;
a truck having steel wheel pairs operable along the running surface with the
wheel pairs synchronized and tapered for self centering while rolling along the track ;
a chassis carried by the truck;
a car body suspended from the chassis, wherein a center of rotation of the car
body is above the connection therebetween, the car body having a floor surface for
carrying a load thereon, wherein the floor surface moves from a horizontal orientation to
a tilted orientation during operation of the truck along a curved portion of the running
surface so as to result in a pendulum like movement of the floor surface and thus the
load; and

a suspension member removably suspending the car body from the chassis, the

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suspension member having a proximal end operable with the chassis and an opposing distal end connected to the car body, wherein the suspension member includes a first support carried by the chassis and a linking arm connected between the car body and the first support, wherein the linking arm comprises at least one of a spring, a piston, and a combination thereof.

33. (original) A system according to claim 11, further comprising a winch and cable mechanism carried by the chassis and operable for raising and lowering the car body therefrom.

34. (original) A system according to claim 11, further comprising a grapple operably connected to the chassis, and wherein the car body comprises a container for carrying freight therein.

35. (original) A system according to claim 34, wherein the grapple comprises:
an upper member removably suspended from the chassis; and
opposing side members slidably connected to the upper member for cradling the container therebetween.

36. (previously presented) A system according to claim 11, further comprising a driving means operable with the truck for driving the truck along the running surface, wherein wheels operable therewith rotate at a synchronized speed.

37. (original) A system according to claim 36, wherein the driving means comprises an electric motor operable with power delivered thereto from a contact strip carried with the running surface.

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38. (currently amended): A transportation system comprising:
a running surface suspended above ground level;
a carrying vehicle having wheels operable over the running surface; ~~and~~
a rigid suspension member for removably suspending a car body from the carrying vehicle, the suspension member having a proximal end operable with the carrying vehicle and an opposing distal end for connecting to the car body; and
a car body rigidly attached to the suspension member, wherein a single axis of rotation of the car body is above a connection of the suspension member to the carrying vehicle, the car body having a floor surface for carrying a load thereon, wherein the floor surface moves from a horizontal orientation to a tilted orientation during operation of the carrying vehicle along a curved portion of the running surface so as to result in a pendulum like movement of the floor surface and thus the load,

wherein the rigid suspension member includes a first support at a proximal end thereof carried by the carrying vehicle and a linking arm connected between the car body and the first support, wherein the linking arm includes an arcuate member rotatably operable with a surface of the first support and a bracket having a proximal end operable with the arcuate member and a distal end affixed to the car body.

Claims 39 and 40 (cancelled)

41. (currently amended): A system according to claim 40 ~~38~~, further comprising:
a first bracket pair affixed to the car body; and
a second bracket pair affixed to the first support, wherein the linking arm comprises a linking arm pair, each linking arm of the linking arm pair having proximal and distal ends slidably connected to first and second brackets of the first and second bracket pairs for providing a lateral rotation of the car body about the center of rotation located above the carrying vehicle, wherein the center of rotation is laterally displaced

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during rotation of the car body.

Claim 42 (cancelled)

43. (currently amended): A system according to claim 42 38, wherein the surface of the first support comprises a concave shape for receiving the arcuate member.

44. (currently amended): A system according to claim 42 38, wherein the arcuate member is circular in cross section.

45. (currently amended): A system according to claim 40 38, wherein the linking arm comprises at least one of a spring, a piston, and a combination thereof.

Claim 46-59 (cancelled)

60. (currently amended): A transportation system comprising:
a running surface having a rail pair forming a track carried thereby;
a support structure for positioning the running surface above ground level;
a truck operable along the running surface, the truck having wheel pairs synchronized and tapered for self centering while rolling along the track;
a chassis carried by the truck ~~and~~;
a car body suspended from the chassis; and
a suspension member having a first support at a proximal end thereof carried by the chassis and a linking arm connected between the car body and the first support, wherein the linking arm includes an arcuate member rotatably operable with a surface of the first support and a bracket having a proximal end operable with the arcuate member and a distal end affixed to the car body.

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61. (previously presented) A system according to claim 60 wherein the rail pair and wheel pairs are steel.

62. (previously presented) A system according to claim 60, wherein the track is superelevated at least along a curved portion thereof, and wherein the superelevated track includes one rail at a different elevation than an opposing rail.

63. (previously presented) A system according to claim 62, wherein the superelevated portion of the running surface is inclined by at least eight degrees.

64. (previously presented) A system according to claim 62, wherein the superelevation is within 16 degrees and a swing out of the car body to within 16 degrees beneath the chassis, thus permitting a combined total swing out of up to 32 degrees of tilt for permitting increased car body speeds on curves.

65. (previously presented) A system according to claim 60, wherein the wheel pairs include coned wheels.

66. (previously presented) A system according to claim 60, wherein at least one of the wheel pairs comprises electrically coupled motor wheels.

67. (previously presented) A system according to claim 66, wherein the electrically coupled motor wheels include double flanged wheels.

68. (currently amended): A transportation system comprising:
a running surface having a rail pair forming a track carried thereby;

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a support structure for positioning the running surface above ground level;
a carrying vehicle operable along the running surface, the carrying vehicle having wheel pairs with each wheel tapered, the wheel pairs synchronized for self centering while rolling along the track; and
a car body suspended from the carrying vehicle; and
a suspension member having a first support at a proximal end thereof carried by the carrying vehicle and a linking arm connected between the car body and the first support, wherein the linking arm includes an arcuate member rotatably operable with a surface of the first support and a bracket having a proximal end operable with the arcuate member and a distal end affixed to the car body.

69. (previously presented) A system according to claim 68, wherein a center of rotation of the car body is above a connection to the carrying vehicle thus effectively extending a radius of rotation thereof, the car body having a floor surface for carrying a load thereon, wherein the floor surface moves from a horizontal orientation to a tilted orientation during operation of the carrying vehicle along a curved portion of the running surface so as to result in a pendulum like movement of the floor surface and thus the load.

70. (previously presented) A system according to claim 68, wherein the track and wheel pairs are steel.

71. (previously presented) A system according to claim 68, wherein the track is superelevated at least along a curved portion thereof, and wherein the superelevated track includes one rail surface at a different elevation than an opposing rail surface.

72. (previously presented) A system according to claim 71, wherein the

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superelevated portion of the running surface is inclined by at least eight degrees.

73. (previously presented) A transportation system comprising:

a running surface suspended above ground level;

a carrying vehicle having wheels operable over the running surface;

a car body;

a suspension member suspending the car body from the carrying vehicle, the suspension member having a proximal end operable with the carrying vehicle and an opposing distal end connected to the car body, the suspension member having a first support carried by the carrying vehicle, a linking arm connected between the car body and the first support, an arcuate member rotatably operable with a surface of the first support, and a bracket having a proximal end rotatably operable with the arcuate member and a distal end affixed to the car body.

74. (previously presented) A system according to claim 73, further comprising:

a first bracket pair affixed to the car body; and

a second bracket pair affixed to the first support, wherein the linking arm comprises a linking arm pair, each linking arm of the linking arm pair having proximal and distal ends slidably connected to first and second brackets of the first and second bracket pairs for providing a lateral rotation of the car body about the center of rotation located above the carrying vehicle, wherein the center of rotation is laterally displaced during rotation of the car body.

75. (previously presented) A system according to claim 73, wherein the surface of the first support comprises a concave shape for receiving the arcuate member.

76. (previously presented) A system according to claim 73, wherein the arcuate

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member is circular in cross section.

77. (previously presented) A system according to claim 73, wherein the linking arm comprises at least one of a spring, a piston, and a combination thereof.

78. (previously presented) A transportation system comprising:
a running surface suspended above ground level;
a carrying vehicle having wheels operable over the running surface; and
a car body suspended below the carrying vehicle, wherein a center of rotation of the car body is thereabove;

a suspension member for removably suspending the car body from the carrying vehicle, the suspension member having a proximal end operable with the carrying vehicle and an opposing distal end connected to the car body, wherein the suspension member includes a first support carried by the carrying vehicle and a linking arm connected between the car body and the first support, and wherein the linking arm includes at least one of a spring, a piston, and a combination thereof.

79. (previously presented) A system according to claim 78, further comprising:
a first bracket pair affixed to the car body; and
a second bracket pair affixed to the first support, wherein the linking arm comprises a linking arm pair, each linking arm of the linking arm pair having proximal and distal ends slidably connected to first and second brackets of the first and second bracket pairs for providing a lateral rotation of the car body about the center of rotation located above the carrying vehicle, wherein the center of rotation is laterally displaced during rotation of the car body.

80. (previously presented) A system according to claim 78, further comprising:

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an arcuate member rotatably operable with a surface of the first support;
a bracket having a proximal end rotatably operable with the arcuate member and
a distal end affixed to the car body.

81. (previously presented) A system according to claim 78, wherein the surface
of the first support comprises a concave shape for receiving the arcuate member.

82. (previously presented) A system according to claim 78, wherein the arcuate
member is circular in cross section.

83. (previously presented) A transportation system comprising:
a running surface having a rail pair forming a track carried thereby, wherein the
track is superelevated at least along a curved portion thereof.
a support structure for positioning the running surface above ground level;
a carrying vehicle operable along the running surface; and
a car body suspended from the carrying vehicle.

84. (previously presented) A system according to claim 83, wherein a center of
rotation of the car body is above a connection to the carrying vehicle thus effectively
extending a radius of rotation thereof, the car body having a floor surface for carrying a
load thereon, wherein the floor surface moves from a horizontal orientation to a tilted
orientation during operation of the carrying vehicle along a curved portion of the running
surface so as to result in a pendulum like movement of the floor surface and thus the
load.

85. (previously presented) A system according to claim 83, wherein the track and
wheel pairs are steel.

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86. (previously presented) A system according to claim 83, wherein the superelevated portion of the running surface is inclined by at least eight degrees.

87. (previously presented) A system according to claim 83, wherein the wheel pairs are synchronized for self centering while rolling along the track.